APPENDIX I
MONITORING PLAN

MONITORING COMMON TO ALL ACTION ALTERNATIVES

FOREST PLAN MONITORING

As part of implementing the Nez Perce Forest Plan the Nez Perce Forest monitors a multitude of effects and conditions within the Forest. The Forest Plan Monitoring items are displayed on pages V-4 through 8 and Appendix O of the Nez Perce Forest Plan. These monitoring activities are applied on a sample basis randomly across the Forest or among projects. Some of that monitoring may occur within the American and Crooked River analysis area. Forest Plan monitoring is reported in an annual monitoring and evaluation report.

PROPOSED MONITORING FOR THIS PROJECT

Monitoring is a process of gathering information through observation and measurement to assure the goals, objectives and standards of the Nez Perce Forest Plan are implemented and to ensure implementation and effectiveness of design criteria or mitigation.

Two forms of monitoring are proposed: 1) implementation and 2) effectiveness. These two types of monitoring are described below:

- Implementation monitoring is used to determine if management practices are implemented as planned in the Plan (Nez Perce Forest Plan and/or this EIS).
- Effectiveness monitoring is used to determine if management practices, as designed and executed, are effective in meeting project objectives, as well as goals, objectives, and standards of the Plan (Nez Perce Forest Plan).

MONITORING APPLICABLE TO ALL ACTIVITIES

1. **Implementation monitoring** of the following *design criteria* would be conducted on a sample basis. Monitoring would be accomplished by an interdisciplinary and/or multi-party team through a combination of any of the following methods:
    - Review contract specifications
    - Review designs and plans of operation
    - Review contract administration reports (daily diaries)
    - Review activities on the ground before, during and after implementation.

    Implementation of the following design criteria, as listed in Chapter 2, Table 2.3 of this document, would be monitored: Numbers in parentheses correspond to those in Table 2.3.

    a. Road Decommissioning: (11, 39)
    b. Temporary Road Construction and Road Reconditioning: (12, 36, 39)
    c. Culvert Replacement: (23, 26, 27, 28)
    d. Conversion of Roads to Trails: (35)
    e. Fuel Haul, Storage and Spill Containment: (31)
    f. Transport: (31, 37)
    g. Storage and Transfer: (31)
    h. Spill Containment: (31)
    i. Prescribed Fire and Smoke Management: (4, 38, 39, 40)
    j. Timber Harvest: (1, 2, 3)

k. Exotic Vegetation Management: (53, 54, 55, 56)
l. Soil Resource Protection: (3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 33)
    i. Site specific review for landslides or prior harvest impacts; consequent adjustment of harvest or compensatory restoration: done as recommended `
    ii. Skid trail spacing and designated skid trails: done as recommended
    iii. Topsoil stockpiling: done where recommended
    iv. Imposition of controls on operations to avoid soil resource damage.
    v. Whole tree yarding: acres whole tree yarded on susceptible geologic
    vi. Mechanical slash piling: acres mechanical piled compared to acres broadcast burned, underburned, hand piled or no treatment
    vii. Maintain soil nutrients/large woody debris
o. Soil Restoration: (23, 24, 25, 26)
    i. Seasonal controls: employed as recommended
    ii. Post-work stabilization: done as recommended
    iii. Acres accomplished
p. Stream Restoration: (23, 29, 30, 32)
q. Snag and green tree marking done to levels recommended: (44)
r. Cultural Resource Protection: (50, 51, 52)
s. Access Management (34)
t. Wildlife Protection (41, 42, 43, 45, 46, 47, 48, 49)

2. **Effectiveness monitoring** to determine if design criteria achieve their objectives. Effectiveness monitoring would be accomplished using established protocols specific to each criterion. Effectiveness of the following design criteria, as listed in Chapter 2, Table 2.3 of this document, would be monitored:
    a. Road Decommissioning: (11,39)
    b. Temporary Road Construction and Road Reconditioning: (12, 36, 39)
    c. Culvert Replacement: (23, 26, 27, 28)
    d. Conversion of Roads to Trails: (35)
    e. Prescribed Fire and Smoke Management: (38, 39, 40)
    f. Timber Harvest: (1, 2)
    g. Soil Resource Protection: (3-22, and 33)
        i. Compliance with forest/regional soil quality standards: standard R6 protocols on a sample of logging units
        ii. Compliance with snag/green tree and down wood retention recommendations: Measurement after logging and fuels treatments to assess retention levels
    h. Exotic Vegetation Management: (53-56)

        Re-survey risk zones for changes in weed infestations after implementation of design criteria for noxious weeds to insure that weed spread from the ground disturbing actions is minimized or eliminated.

    i. Wildlife: (41, 42, 43, 45, 46, 47, 48, 49)

3. **Effectiveness monitoring** to determine if treatments help meet goals and objectives, as described in Chapters 1 and 2 of this EIS. Effectiveness monitoring would be accomplished using established protocols specific to each issue or indicator.

   Effectiveness monitoring of the following treatments would be conducted with all alternatives.

   a. Effectiveness of road decommissioning and soil restoration to reduce erosion sources: identify sample monitoring sites and before and after photos and characterization.
   b. Effectiveness of soil restoration to improve permeability on decompacted sites: Permeability measurements on compacted and decompacted sites
   c. Effectiveness of road decommissioning to recover native vegetation: Vegetation frequency and cover plots 3 to 5 years after decommissioning.
   d. Effectiveness of prescribed fire to achieve desired stand density, amount of fuels reduction and reduction in fire risk.
   e. Effectiveness of timber harvest to achieve desired stand density, size class, species mix, cover types and canopy layers.
   f. Effectiveness of stream restoration activities to restore fish habitat elements.
   g. Effectiveness of noxious weed design criteria to reduce or eliminate spread of existing invasive plants infestations and/or eradicate new infestations.

4. Monitor accomplishment of activities over time with an annual report of the past year's implementation and monitoring accomplishments and the planned accomplishments for the next year. Adjust implementation designs to respond to monitoring findings, where modification would better meet objectives of design criteria or Forest Plan standards.

AQUATIC MONITORING

The isolated westslope cutthroat trout populations in Whitaker and Queens Creek will have genetics samples taken to document existing genetic make up for comparison with fish populations in a connected system. Dialog will continue with BLM and research biologists as to benefits associated with connecting two streams to the mainstem river.

Before and after stream surveys will be conducted in Crooked River where instream improvements are planned. Permanent stations will be located to document fish population responses. These stations will be established in coordination with existing parr monitoring stations monitored by IDFG.

PRESCRIBED FIRE MONITORING

The Programmatic Biological Assessment for the Fire Management Program (South Fork Clearwater River Biological Assessment, 1999 p. 97) specifies monitoring items for the prescribed fire program. These monitoring items include items such as location and size, mortality levels and patch size, and riparian fire intensity. This monitoring occurs for all fire activities occurring under this Biological Assessment. This monitoring would also be applicable to prescribed fire activities proposed with this project.

NOXIOUS AND EXOTIC SPECIES MONITORING

On-going monitoring within the South Fork Clearwater River subbasin includes weed surveys to document the extent and changes of weed infestations. In addition when weeds are treated effectiveness monitoring is conducted on selected sites to determine if the management treatment is effective in reducing the target infestation. This work is coordinated with the community-based weed mgt cooperative through Idaho County Weed Control.

MANAGEMENT INDICATOR SPECIES MONITORING

Forestwide MIS populations monitoring for bald eagle, pileated woodpecker, goshawk, fisher and pine marten are conducted annually for most species with sample plots or transects that occur within or immediately adjacent to the project area. Results are reported in the Forest Plan Annual Monitoring and Evaluation Report.

WOLF RECOVERY MONITORING

Monitoring of wolf recovery is conducted by the Nez Perce Tribe Wolf Program. Recovery continues and wolf numbers continuing growing. Currently, there are 5 wolf packs that overlap or are in close proximity to the project analysis area.

LANDBIRD POPULATION MONITORING

In 1993, a USFS Region-wide Landbird Monitoring Program was initiated. Sample plots were established along randomly distributed transects distributed across all 13 national forests of Region 1. Monitoring of Neotropical migrant songbird species diversity and populations is currently being done in partnership with non-game biologists of the Idaho Department of Fish & Game and overseen by researchers from the University of Montana (Hutto, R.L. and Young, J.S., 1999). Transects are distributed across the Forest and include transects near the project area.